# Does cognateness impact bilingual lexical acquisition?

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## Background

How does the similarity between two Translation Equivalents (TE) (i.e., **cognateness**) affect **lexical acquisition**?

Toddlers learning two languages sharing more cognates show **larger vocabulary sizes** in their **non-dominant language** (language of less exposure; at 24 mo)[1]

↑ **Cognates** ↑ Vocabulary size

We suggest that **cognate pairs of TEs** are acquired **earlier** (hypothesis 1) and **closer in time** (hypothesis 2) than non-cognate TEs, only in the **non-dominant language**.

## Methods

**334 bilinguals** aged **12 to 34 mo**

- 219 Catalan-dominant, 115 Spanish-dominant
- 10-50% exposure to non-dominant language.

We collected comprehensive and productive data:

- **Lab checklist**: 100 items in Catalan + 100 items in Spanish
- **Online checklist:** 718 in Spanish + 718 items in Catalan (participants completed a random selection of ~245 items).

16 semantic/functional categories

**REFERENCES:** [1] Floccia et al. (2018), [2] Mahr (2020), [3] Bürkner (2017), [4] Frank et al. (2017), [5] Cuetos et al. (2011), [6] Boada et al. (2019)

## (1) Are cognates acquired earlier?

We used **logistic curves** to model the **proportion** of toddlers that were reported to understand each item. [2]

We defined age of acquisition (AoA) of each word as the age at which its acquisition curve is steepest (*Mid-point*)

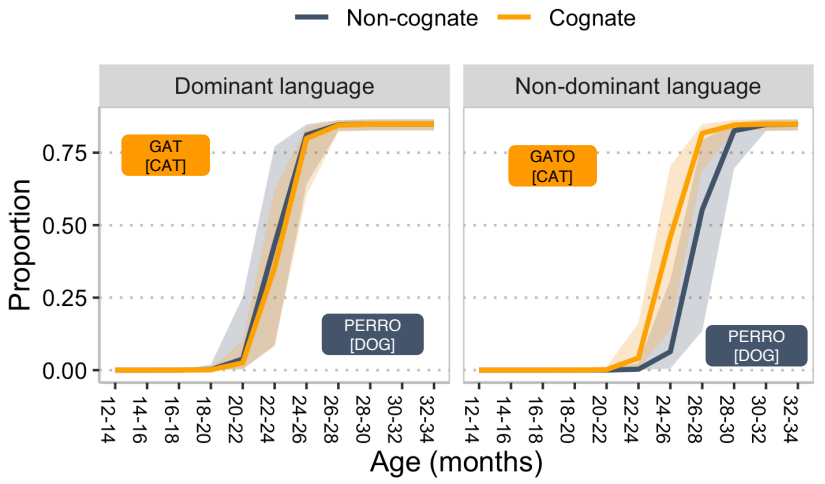
We estimated **mid-points** using a **Bayesian** model. [3]

*Predictors*

- **Dominance** (Non-dominant vs. dominant): The word belongs to the language the toddlers is most exposed to.
- **Cognateness** (Non-cognate vs. Cognate): Phonological similarity between the forms of the TE.

This model fitted the data **moderately better** than a model not including *Cognateness* ($ELPD_{diff}$ = -14.4, $SE_{diff}$ = 3.2)

Posterior predictive checks: What does our model predict?




Lines represent the median of the marginal posterior distribution of fitted values. Shaded areas represent 95% credible intervals.

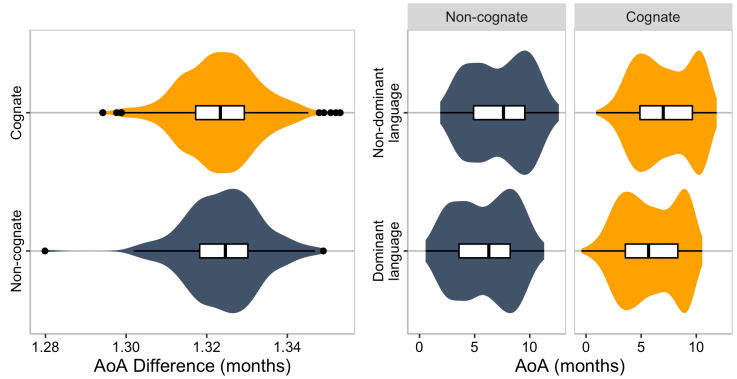
## (2) Are cognate TEs acquired closer in time?

We calculated the **difference in months** between the **mid-points** of each Translation Equivalent (TE):

- $AoA_{diff}$ = $Mid\text{-}point_{Dominant}$ – $Mid\text{-}point_{Non\text{-}dominant}$

**Bayesian ANOVA**: Strong support for H0 absence of cognateness effect (*BF*: 0.13)

Difference in Age of Acquisition (AoA) across Translation Equivalents (TEs)




## Conclusions

We present preliminary data on **comprehensive vocabulary**. Data collection is ongoing. The distribution of participants across ages is still uneven. We provide:

(1) **Moderate** but **inconclusive** evidence that cognates are aquired ealier than non-cognates in the **non-dominant language**.
(2) Strong evidence **against** the hypothesis that cognate TEs are acquired closer in time than non-cognates.

Future steps involve introducing **non-dichotomous** measures of degree of **bilingualism** (balance of exposure between languages), and **cognateness** (phonological similarity between TEs),